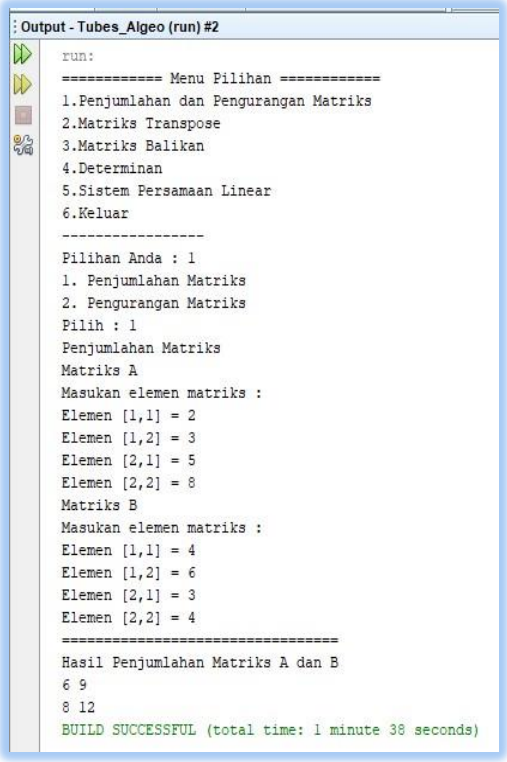
NO	HASIL SIMULASI	KETERANGAN
Penjumlahan Matriks		
1		Input pertambahan matriks: Tentukan hasil dari $\begin{pmatrix} 2 & 3 \\ 5 & 8 \end{pmatrix} + \begin{pmatrix} 4 & 6 \\ 3 & 4 \end{pmatrix}$ $\begin{pmatrix} 2 & 3 \\ 5 & 8 \end{pmatrix} + \begin{pmatrix} 4 & 6 \\ 3 & 4 \end{pmatrix} = \begin{pmatrix} 6+4 & 3+6 \\ 5+3 & 8+4 \end{pmatrix}$ $\begin{pmatrix} 2 & 3 \\ 5 & 8 \end{pmatrix} + \begin{pmatrix} 4 & 6 \\ 3 & 4 \end{pmatrix} = \begin{pmatrix} 6 & 9 \\ 8 & 12 \end{pmatrix}$
Pengurangan Matriks		

<table>
<tr>
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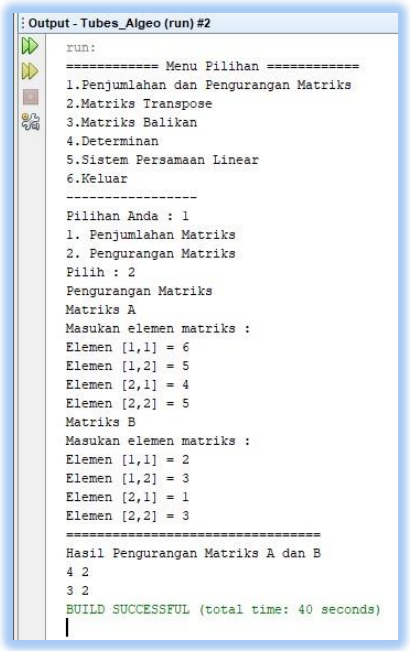

```
Output - Tubes_Algeo (run) #2
run:
============ Menu Pilihan ============
1.Penjumlahan dan Pengurangan Matriks
2.Matriks Transpose
3.Matriks Balikan
4.Determinan
5.Sistem Persamaan Linear
6.Keluar
-----------------
Pilihan Anda : 1
1. Penjumlahan Matriks
2. Pengurangan Matriks
Pilih : 2
Pengurangan Matriks
Matriks A
Masukan elemen matriks :
Elemen [1,1] = 6
Elemen [1,2] = 5
Elemen [2,1] = 4
Elemen [2,2] = 5
Matriks B
Masukan elemen matriks :
Elemen [1,1] = 2
Elemen [1,2] = 3
Elemen [2,1] = 1
Elemen [2,2] = 3
================================
Hasil Pengurangan Matriks A dan B
4 2
3 2
BUILD SUCCESSFUL (total time: 40 seconds)
```

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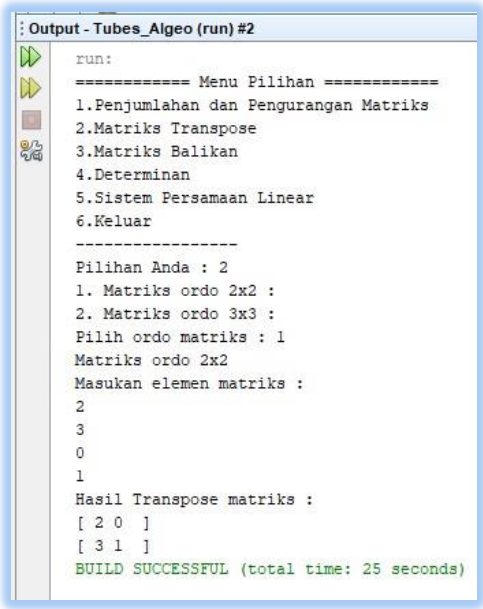
$$\begin{pmatrix} 6 & 5 \\ 4 & 5 \end{pmatrix} - \begin{pmatrix} 2 & 3 \\ 1 & 3 \end{pmatrix}$$

$$\begin{pmatrix} 6 & 5 \\ 4 & 5 \end{pmatrix} - \begin{pmatrix} 2 & 3 \\ 1 & 3 \end{pmatrix} = \begin{pmatrix} 6-2 & 5-3 \\ 4-1 & 5-3 \end{pmatrix}$$

$$\begin{pmatrix} 6 & 5 \\ 4 & 5 \end{pmatrix} - \begin{pmatrix} 2 & 3 \\ 1 & 3 \end{pmatrix} = \begin{pmatrix} 4 & 2 \\ 3 & 2 \end{pmatrix}$$

</td>
</tr>
<tr>
<td colspan="3">Matriks Transpose 2 x 2</td>
</tr>
<tr>
<td>2</td>
<td>



```
Output - Tubes_Algeo (run) #2
run:
============ Menu Pilihan ============
1.Penjumlahan dan Pengurangan Matriks
2.Matriks Transpose
3.Matriks Balikan
4.Determinan
5.Sistem Persamaan Linear
6.Keluar
-----------------
Pilihan Anda : 2
1. Matriks ordo 2x2 :
2. Matriks ordo 3x3 :
Pilih ordo matriks : 1
Matriks ordo 2x2
Masukan elemen matriks :
2
3
0
1
Hasil Transpose matriks :
[ 2 0  ]
[ 3 1  ]
BUILD SUCCESSFUL (total time: 25 seconds)
```

</td>
<td>

$A = \begin{pmatrix} 2 & 3 \\ 0 & 1 \end{pmatrix}$ Hasilnya $A = \begin{pmatrix} 2 & 0 \\ 3 & 1 \end{pmatrix}$

(2 x 2) (2 x 2)

</td>
</tr>
</table>

Matriks Transpose 3 x 3

```
Output - Tubes_Algeo (run) #2
run:
============ Menu Pilihan ============
1.Penjumlahan dan Pengurangan Matriks
2.Matriks Transpose
3.Matriks Balikan
4.Determinan
5.Sistem Persamaan Linear
6.Keluar
-----------------
Pilihan Anda : 2
1. Matriks ordo 2x2 :
2. Matriks ordo 3x3 :
Pilih ordo matriks : 2
Matriks ordo 3x3
Masukan elemen matriks :
1
2
3
0
-2
-1
4
3
5
Hasil Transpose matriks :
[ 1 0 4  ]
[ 2 -2 3  ]
[ 3 -1 5  ]
BUILD SUCCESSFUL (total time: 52 seconds)
```

$$C = \begin{pmatrix} 1 & 2 & 3 \\ 0 & -2 & -1 \\ 4 & 3 & 5 \end{pmatrix}$$ Hasilnya

$$C = \begin{pmatrix} 1 & 0 & 4 \\ 2 & -2 & 3 \\ 3 & -1 & 5 \end{pmatrix}$$

(3x3) (3x3)

Matriks Balikan

Menghitung Determinan Matriks 2x2

1

```
Output - Tubes_Algeo (run) #2
run:
============ Menu Pilihan ============
1.Penjumlahan dan Pengurangan Matriks
2.Matriks Transpose
3.Matriks Balikan
4.Determinan
5.Sistem Persamaan Linear
6.Keluar
-----------------
Pilihan Anda : 4
Mencari Determinan Matriks
1. Matriks 2x2
2. Matriks 3x3
Pilih ordo matriks : 1
Matriks ordo 2x2
Masukan elemen matriks :
Elemen [1,1] = 1
Elemen [1,2] = 2

Elemen [2,1] = 3
Elemen [2,2] = 4

Matriks Asli  :
[ 1 2  ]
[ 3 4  ]
Determinan : -2.0
```

$$A = \begin{pmatrix} 1 & 2 \\ 0 & -2 \end{pmatrix} = (1)(4) - (2)(3)$$

Det (A) = 4 – 6
Det (A) = -2

Menghitung Determinan Matriks 3x3

```
Matriks ordo 3x3
Masukan elemen matriks :
Elemen [1,1] = 4
Elemen [1,2] = -2
Elemen [1,3] = 1

Elemen [2,1] = 4
Elemen [2,2] = 0
Elemen [2,3] = 3

Elemen [3,1] = 0
Elemen [3,2] = 4
Elemen [3,3] = 5

Matriks Asli  :
[ 4 -2 1  ]
[ 4 0 3  ]
[ 0 4 5  ]
Determinan : 8.0
BUILD SUCCESSFUL (total tim
```

Output Tubes_A

$$\begin{pmatrix} 4 & -2 & 1 \\ 4 & 0 & 3 \\ 0 & 4 & 5 \end{pmatrix} = \begin{pmatrix} 4 & -2 & 1 \\ 4 & 0 & 3 \\ 0 & 4 & 5 \end{pmatrix} \begin{matrix} 4 & -2 \\ 4 & 0 \\ 0 & 4 \end{matrix}$$

= 0 + 0 + 16 - 0 – 48 + 40 = 8

Sistem Persamaan Linier

Output - Tubes_Algeo (run)

```
run:
============ Menu Pilihan ============
1.Penjumlahan dan Pengurangan Matriks
2.Matriks Transpose
3.Matriks Balikan
4.Determinan
5.Sistem Persamaan Linear
6.Keluar
-----------------
Pilihan Anda : 5
Masukkan nilai matriks koefisien A dan vektor hasil b (matriks ordo 2x3):
a11: 2
a12: 4
a13: -6
a21: 4
a22: 6
a23: 1
b1: 8
b2: 12
Solusi SPL:
x = -0.0
y = 2.0
```

Contoh Soal

2x + 4y -6z = 8

4x + 6y + z = 12

Matriks augmented nya adalah

$$\left(\begin{array}{ccc|c} 2 & 4 & -6 & 8 \\ 4 & 6 & 1 & 12 \end{array}\right)$$

1. R1 > ½ R1

$$\left(\begin{array}{ccc|c} 1 & 2 & -3 & 4 \\ 4 & 6 & 1 & 12 \end{array}\right)$$

2.R2 – 4R1

$$\left(\begin{array}{ccc|c} 1 & 2 & -3 & 4 \\ 0 & -2 & 13 & -4 \end{array}\right)$$

3.R2 > - ½ R2

$$\left(\begin{array}{ccc|c} 1 & 2 & -3 & 4 \\ 0 & 1 & -13/2 & 2 \end{array}\right)$$

4.R1 – 2R2

$$\left(\begin{array}{ccc|c} & & & \\ & & & \end{array}\right)$$

		$\begin{array}{ccc\|c} 1 & 0 & 9 & 0 \\ 0 & 1 & -13/2 & 2 \end{array}$ Bisa ditafsirkan bahwa x = 0 dan y = 2 sedangkan variabel z tidak memiliki kontribusi karena tidak mendapatkan nilai tunggal